

WHAT IS CLAIMED IS:

1. An ultrasonic sensor, comprising:
a transducer for transmitting and receiving sound waves;
5 a drive circuit connected to the transducer for driving the transducer to produce sound waves according to predetermined sound pressure level; and
a microcontroller connected to the drive circuit for directing the drive circuit to produce a predetermined amount of voltage, the amount of voltage determined as a function of environment temperature and the predetermined amount of voltage directly related to the
10 predetermined sound pressure level.

2. The ultrasonic sensor of claim 1, wherein the amount of voltage increases as the environment temperature increases.

15 3. The ultrasonic sensor of claim 1, further comprising:
a dynamic temperature model that allows gain on the received sound waves to be adjusted, the gain being adjusted as a function of temperature.

20 4. The ultrasonic sensor of claim 3, wherein the gain increases as the temperature increases.

5. The ultrasonic sensor of claim 3, wherein the dynamic temperature model includes an air density model and a gain model.

25 6. The ultrasonic sensor of claim 5, wherein the gain increases as air density decreases.

7. The ultrasonic sensor of claim 3, further comprising:
an amplifier for adjusting the gain according to the dynamic temperature model.

30 8. The ultrasonic sensor of claim 1, wherein the drive circuit comprises:
a logic level field effect transistor; and

a step up transformer connected to the logic level field effect transistor that steps up voltage applied to the logic level field effect transistor and applies the voltage to the transducer.

9. The ultrasonic sensor of claim 3, further comprising:

5 a controller, connected to the microcontroller, for receiving information from the microcontroller about detected objects and alerting a user.

10. An ultrasonic detection system, comprising:

a controller; and

10 a plurality of sensors, each of the plurality of sensors having at least a data input and data output,

wherein the plurality of sensors are serially connected and the controller polls and configures an address for each of the plurality of sensors in real time through a chain in the plurality of sensors.

15 11. The ultrasonic detection system of claim 10, wherein the controller directs a first one of the plurality of sensors to switch itself on and configures an address for the first one of the plurality of sensors.

20 12. The ultrasonic detection system of claim 11, wherein the controller directs the first one of the plurality of sensors to direct a second one of the plurality of sensors to switch itself on and passes a configured address for the second one of the plurality of sensors via the first one of the plurality of sensors.

25 13. The ultrasonic detection system of claim 10, wherein each of the plurality of sensors include:

a transducer for transmitting and receiving sound waves;

a drive circuit connected to the transducer for driving the transducer to produce sound waves according to predetermined sound pressure level; and

30 a microcontroller connected to the drive circuit for directing the drive circuit to produce a predetermined amount of voltage, the amount of voltage determined as a function of

environment temperature and the predetermined amount of voltage directly related to the predetermined sound pressure level.